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EXAMINER	
HADIDI, JON	

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,273	DENGLER ET AL.	
	Examiner	Art Unit	
	Jon Hadidi	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,18,22,26,30 and 34-36* is/are rejected.

7)☒ Claim(s) *7-17, 19-21, 23-25, 27-29, 31-33, and 37-38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *December 5, 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6, 18, 22, 26, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kreitman, U.S. Patent No. 5,491,517.

With regard to claim 1, Kreitman describes applying a transform function to visual content to be inserted into an image sequence (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2); and blending the transformed visual content with the image sequence (see Kreitman, col. 6, lines 26-37, Fig. 4C, and col. 8, lines 1-9, wherein transformed blending mask 58 is utilized to blend the image 42 with the colors of the field on which the image 42 is implanted); wherein the transforming step and the blending step together result in insertion of the content into the image sequence such that the content appears at a target location as if it had been part of the original scene displayed by the image sequence (see Kreitman, col. 8, lines 1-9, wherein if players walk on the part of the court 32 where the image 42 is implanted, they will appear to walk "over" the implanted image); and wherein the transforming step comprises all applied geometric

transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions).

With regard to claim 2, Kreitman describes wherein the three dimensional real world space locations include a location of a camera which originally produced the image sequence (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 is performed without reference to any three dimensional real world space locations or dimensions at all, including a location of a camera which originally produced the image sequence).

With regard to claim 3, Kreitman describes wherein the three-dimensional real world scale dimensions comprise units of physical measurement relating to the scene of the image sequence (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 is performed without reference to any three dimensional real world space locations or dimensions at all, including units of physical measurement relating to the scene of the image sequence).

With regard to claim 4, Kreitman describes wherein the blending step is performed without reference to any three-dimensional real world space locations (see Kreitman, col. 6, lines 25-37 and col. 8, lines 1-9, wherein blending mask 58 is utilized

to blend the image 42 with the colors of the field on which the image 42 is implanted, without reference to any three-dimensional real world space locations).

With regard to claim 5, Kreitman describes wherein the target location may change relative to the scene (see Kreitman, Fig. 3, possible target locations 52, col. 6, lines 17-24, wherein the implantation designer designs the image 42 to be implanted and determines where on the model 50 to place it at one of the plurality of target positions 52) and as the image sequence progresses (see Kreitman, col. 1, lines 19-28, wherein target locations are re-selected as the image sequence progresses).

With regard to claim 6, Kreitman describes wherein the image sequence is received from an analog video recorder, a digital video recorder or a broadcast quality video camera (see Kreitman, Fig. 2, broadcast quality video cameras 30 and col. 5, lines 22-36, wherein the image sequence is inherently received from an analog video recorder since videotape is can be a source of the image sequence).

With regard to claim 18, Kreitman describes applying a transform function to a marker line that is to be inserted into an image sequence that was produced by a camera (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 which is comprised of marker lines is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2); and blending the transformed line with the image sequence (see Kreitman, col. 6, lines 26-37, Fig. 4C, and col. 8, lines 1-9, wherein transformed blending mask 58 is utilized to blend the image 42 with the colors of the field on which the image 42 is implanted); wherein the transforming step and the blending step together result in insertion of the

line into the image sequence such that the line appears at a target location as if it had been part of the original scene displayed by the image sequence (see Kreitman, col. 8, lines 1-9, wherein if players walk on the part of the court 32 where the image 42 is implanted, they will appear to walk "over" the implanted image); and wherein the transforming step comprises all applied geometric transformations of the line, is performed without reference to any real-time content of the image sequence, and is performed without reference to any location of the camera (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions).

With regard to claim 22, Kreitman describes applying a transform function to a virtual sign that is to be placed into an image sequence that was produced by a camera (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2); and blending the transformed sign with the image sequence (see Kreitman, col. 6, lines 26-37, Fig. 4C, and col. 8, lines 1-9, wherein transformed blending mask 58 is utilized to blend the image 42 with the colors of the field on which the image 42 is implanted); wherein the transforming step and the blending step together result in insertion of the sign into the image sequence such that the sign appears at a target location as if it had been part of the original scene displayed by the image sequence (see Kreitman, col. 8, lines 1-9, wherein if players walk on the

part of the court 32 where the image 42 is implanted, they will appear to walk "over" the implanted image); and wherein the transforming step comprises all applied geometric transformations of the sign, is performed without reference to any content of the image sequence, and is performed without reference to location of the camera (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions).

With regard to claim 26, Kreitman describes applying a transform function to visual content to be inserted into an image sequence, wherein the image sequence includes a moving object (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2, and wherein the input video frame includes moving objects such as tennis players 44 of Fig. 6); and blending the transformed visual content with the image sequence (see Kreitman, col. 6, lines 26-37, Fig. 4C, and col. 8, lines 1-9, wherein transformed blending mask 58 is utilized to blend the image 42 with the colors of the field on which the image 42 is implanted); wherein the transforming step and the blending step together result in insertion of the content into the image sequence such that the content appears at a target location as if it had been part of the original scene displayed by the image sequence, and such that the content is located on the moving object as the object moves in the scene (see Kreitman, col. 8, lines 1-9, wherein if the tennis players walk on the part of the court 32 where the

image 42 is implanted, they will appear to walk "over" the implanted image); and wherein the transforming step comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions).

With regard to claim 34, Kreitman describes applying a transform function to transform a first point P[A] within a first image to a second point P[B] within a second image (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2); wherein the first image contains content related to a first camera view (see Kreitman, Fig. 3 and col. 6, lines 7-16, wherein image 42 is content related to the computer's inherent virtual camera "top view" of geometric tennis court model 50); wherein the second image contains content related to a second camera view (see col. 7, lines 30-67, wherein the input video frame is generated by active camera 30); wherein the point P[A] corresponds to the same location within real world space as point P[B] (see Kreitman, col. 6, lines 7-16, wherein the geometric tennis court model 50 is a scaled version of the real tennis court 32, therefore, points on the two tennis courts correspond); wherein the transforming step is performed without

reference to any content of the first image and the second image; wherein the transforming step is further performed without reference to any three-dimensional real world space locations or dimensions as related to the content of the first image and the second image (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions).

With regard to claim 35, Kreitman describes a set of fixed transform parameters (see Kreitman, col. 7, lines 58-63, generally the features of the playing field, specifically, tennis court lines 38 which are fixed and which are used to produce a transform matrix); first sensor data received from a first camera corresponding to the first camera view (col. 7, line 64 to col. 8, line 9, image 42, wherein image 42 is sensed data related to the computer's virtual camera "top view" of geometric tennis court model 50 of Fig. 3); second sensor data received from a second camera corresponding to the second camera view (col. 7, line 64 to col. 8, line 9, the input video frame captured by cameras 30 as shown in Fig. 2); a set of dynamic transform parameters that are based on the fixed transform parameters, the first sensor data and the second sensor data (see Kreitman, col. 8, lines 1-9, wherein transformed blending mask 58 is a dynamic parameter because it is utilized to blend the image 42 with the dynamic colors of the video image on which the image 42 is implanted).

With regard to claim 36, Kreitman describes pan information; tilt information; zoom information; and focus information (see Kreitman col. 3, lines 33-39, wherein pan information is the same as turn information turn information, and wherein focus information is inherent for a camera).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitman, U.S. Patent No. 5,491,517, in view of Rosser, U.S. Patent No. 6,750,919.

With regard to claim 30, Kreitman describes applying a transform function to visual content (see Kreitman, Figs. 2, 4, and col. 7, line 64 to col. 8, line 9, wherein image 42 of Fig. 4 is transformed to match the perspective of the input video frame of Fig. 2 and is inserted into the video frame of Fig. 2); and blending the transformed visual content with an image sequence (see Kreitman, col. 6, lines 26-37, Fig. 4C, and col. 8, lines 1-9, wherein transformed blending mask 58 is utilized to blend the image 42 with the colors of the field on which the image 42 is implanted); wherein the transforming step and the blending step together result in insertion of the content into the image sequence such that the visual content appears as if it had been part of the original scene displayed by the image sequence (see Kreitman, col. 8, lines 1-9, wherein if

players walk on the part of the court 32 where the image 42 is implanted, they will appear to walk "over" the implanted image); wherein said transforming step comprises all applied geometric transformations of the visual content, is performed without reference to any real-time image content of the image sequence and is performed without reference to any three dimensional real world space locations as related to the image sequence (see Kreitman, col. 7, line 64 to col. 8, line 6, wherein the transforming step performed by transformer 64 comprises all applied geometric transformations of the visual content, is performed without reference to any content of the image sequence, and is performed without reference to any three dimensional real world space locations or dimensions). Kreitman fails to explicitly describe dynamically changing visual content, as required by claim 30. However, DiCicco teaches dynamically changing visual content (see Title and Abstract of DiCicco).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Kreitman to incorporate the dynamically changing visual content of Rosser, because Kreitman uses advertising as its visual content, and dynamically changing visual content is more likely to be attractive to the viewer, and is more likely to get the viewer's attention.

Allowable Subject Matter

Claims 7-17, 19-21, 23-25, 27-29, 31-33, and 37-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 7, the claim language "referencing a dynamic scene component model set which contains a three dimensional model for each of a subset of objects present in the scene that is displayed by the image sequence; receiving camera sensor data corresponding to the input image; selecting one scene component model out of the scene component model set; and filling a graphics frame buffer (GFB) with updated pixel data; and wherein the transforming step comprises: transforming the selected scene component model such that, when inserted into the input image, the selected scene component model will appear as if it had been part of the original scene displayed by the input image, thus creating an input embedded model; and texturing the input embedded model with said GFB, thus creating an input embedded GFB model; and wherein the blending step comprises blending the input embedded GFB model with the input image such that the input embedded GFB model appears as if it had been part of the original scene displayed by the input image, thus creating a blended image; and wherein the method also comprises the step of transmitting the input image or the blended image according to a selection of a user", in combination with the claim limitations of its respective parent claim(s), contains allowable subject matter.

With regard to claim 19, the claim language "wherein an instance of the marker line is placed into an input image within the image sequence; further comprising the steps of: referencing a dynamic scene component model set which contains a three dimensional model for each of a subset of objects present in the physical scene that is

displayed by the image sequence; receiving camera sensor data corresponding to the input image; selecting one scene component model out of said scene component model set; and filling a graphics frame buffer (GFB) with updated pixel data; and wherein the transforming step comprises: transforming the selected scene component model such that, when inserted into the input image, the selected scene component model will appear as if it had been part of the original scene as displayed by the input image, thus creating an input embedded model; and texturing the input embedded model with said GFB, thus creating an input embedded GFB model; and wherein the blending step comprises blending the input embedded GFB model with the input image such that the input embedded GFB model appears as if it had been part of the original scene displayed by the input image, thus creating a blended image; and wherein the method also comprises the step of transmitting the input image or the blended image according to a selection of a user", in combination with the claim limitations of its respective parent claim(s), contains allowable subject matter.

With regard to claim 23, the claim language "wherein an instance of the sign is placed into an input image within the image sequence; further comprising the steps of: referencing a dynamic scene component model set which contains a three dimensional model for each of a subset of objects present in the physical scene that is displayed by the image sequence; receiving camera sensor data corresponding to the input image; selecting one scene component model out of the scene component model set; and filling a graphics frame buffer (GFB) with updated pixel data; and wherein the transforming step comprises: transforming the selected scene component model such

that, when inserted into the input image, the elected scene component model will appear as if it had been part of the original scene as displayed by the input image, thus creating an input embedded model; and texturing the input embedded model with the GFB, thus creating an input embedded GFB model; and wherein the blending step comprises blending the input embedded GFB model with the input image such the said input embedded GFB model appears as if it had been part of the original scene displayed by the input image, thus creating a blended image; and wherein the method also comprises the step of transmitting the input image or the blended image according to a selection of a user", in combination with the claim limitations of its respective parent claim(s), contains allowable subject matter.

With regard to claim 27, the claim language "wherein a portion of the content is placed into an input image within the image sequence; comprising the additional steps of: referencing a dynamic scene component model set which contains a three dimensional model for each of a subset of objects present in the scene that is displayed by the image sequence; receiving camera sensor data corresponding to the image; selecting one scene component model out of the scene component model set; and filling a graphics frame buffer (GFB) with updated pixel data; and wherein the transforming step comprises: transforming the selected scene component model such that, when inserted into the input image, the selected scene component will appear as if the selected scene component model had been part of the original scene displayed by the input image, thus creating an input embedded model; and texturing the input embedded model with said GFB, thus creating an input embedded GFB model; and

wherein the blending step comprises blending the input embedded GFB model with the input image such that the input embedded GFB model appears on the moving object as if the input embedded GFB model had been part of the original scene displayed by the input image thus creating a blended image; and wherein the method also comprises the step of transmitting either the input image or the blended image, according to a selection of a user", in combination with the claim limitations of its respective parent claim(s), contains allowable subject matter.

With regard to claim 31, the claim language "wherein a portion of the dynamically changing visual content is placed into an input image within the image sequence; and comprising the additional steps of: referencing a dynamic scene component model set which contains a three dimensional model for each of a subset of objects present in the scene that is displayed by the image sequence; receiving camera sensor data corresponding to the input image; selecting one scene component model out of the scene component model set; and filling a graphics frame buffer (GFB) with updated pixel data; and wherein the transforming step comprises: transforming the selected scene component model such that, when inserted into the input image, the selected scene will appear as if it had been part of the original scene displayed by the input image, thus creating an input embedded model; and texturing the input embedded model with said GFB, thus creating an input embedded GFB model; and wherein the blending step comprises blending the input embedded GFB model with the input image such that the input embedded GFB model appears as if the input embedded GFB model had been part of the original scene displayed by the input image, thus creating a

blended image; and wherein the method also comprises the step of transmitting either the input image or the blended image, according to a selection of a user", in combination with the claim limitations of its respective parent claim(s), contains allowable subject matter.

With regard to claim 37, the claim language "receiving an image sequence from a live camera that is outfitted with camera sensors; receiving a stream of camera sensor data from the attached camera sensors, wherein the stream of camera sensor data comprises camera sensor information applicable to images within the image sequence; receiving selections from a user, via direct input on one or more of the images, of multiple points of interest within 2D camera view space, wherein the selections have been received at multiple levels of camera zoom and focus; correlating, in time, each of the images for which selections were made and each of the user selections to the stream of camera sensor data; determining, based on the user selections and the camera sensor data, a set of zoom/focus transform parameters to be included within the set of fixed transform parameters; receiving selections from a user, via direct input on one or more images, of multiple points of interest within two-dimensional camera view space; wherein the selections have been received at multiple levels of camera pan and camera tilt; correlating, in time, each of the images for which selections were made and each of the user selections to the first and second camera sensor data; and determining, based on the user selections, and the camera sensor data, a set of other parameters to be included within the set of fixed transform parameters", in combination

with the claim limitations of its respective parent claim(s), contains allowable subject matter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Hadidi whose telephone number is 703-605-1187. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH